CLAIMS

1. A method comprising steps of:

covering a first semiconductor die area, said first semiconductor die area including a first dielectric area, said first dielectric area having a first permeability;

interspersing a permeability conversion material in a second area of said semiconductor die, said second semiconductor die area including a second dielectric area, said permeability conversion material having a second permeability, said second permeability being higher than said first permeability.

2. The method of claim 1 wherein said covering step comprises covering said first semiconductor die area with photoresist.

3. The method of claim 1 wherein said first dielectric area comprises silicon dioxide.

4. The method of claim 1 wherein said first dielectric area comprises a low-k dielectric.

5. The method of claim 1 wherein said second dielectric area comprises silicon dioxide.

6. The method of claim 1 wherein said second dielectric area comprises a low-k dielectric.

7. The method of claim 1 wherein said permeability conversion material is selected from the group comprising of nickel, iron, nickel-iron alloy, and magnetic oxide.

8. The method of claim 1 wherein said step of interspersing is performed by implanting said permeability conversion material in said second area of said semiconductor die.

9. The method of claim 1 wherein said step of interspersing is performed by sputtering said permeability conversion material on said second area of said semiconductor die.

10. The method of claim 1 further comprising a step of patterning a conductor within said second dielectric area, said conductor forming an inductor.

11. The method of claim 10 wherein said conductor is selected from the group consisting of copper, aluminum, and copper-aluminum alloy.

12. The method of claim 10 wherein said conductor is patterned as a square spiral.

13. The method of claim 10 wherein said permeability conversion material is selected from the group comprising of nickel, iron, nickel-iron alloy, and magnetic oxide.

14. The method of claim 10 wherein said step of interspersing is performed by implanting said permeability conversion material in said second area of said semiconductor die.

15. The method of claim 10 wherein said step of interspersing is performed by sputtering said permeability conversion material on said second area of said semiconductor die.

16. A method comprising steps of:

patterning a conductor within a dielectric;

interspersing a permeability conversion material in said dielectric, wherein said permeability conversion material has a permeability greater than a permeability of said dielectric.

17. The method of claim 16 wherein said dielectric comprises silicon dioxide.

18. The method of claim 16 wherein said dielectric comprises a low-k dielectric.

19. The method of claim 16 wherein said permeability conversion material is selected from the group comprising of nickel, iron, nickel-iron alloy, and magnetic oxide.

20. The method of claim 16 wherein said step of interspersing is performed by implanting said permeability conversion material in said dielectric.

21. The method of claim 16 wherein said step of interspersing is performed by sputtering said permeability conversion material on said dielectric.

22. The method of claim 16 wherein said conductor is selected from the group consisting of copper, aluminum, and copper-aluminum alloy.

23. The method of claim 16 wherein said conductor is patterned as a square spiral.

24. A structure in a semiconductor chip, said structure comprising:

a first area of a dielectric, said first area of said dielectric having a first permeability;

a second area of said dielectric, said second area of said dielectric having a second permeability, said second permeability being higher than said first permeability;

a conductor patterned in said second area of said dielectric.

25. The structure of claim 24 wherein said dielectric is silicon dioxide.

26. The structure of claim 24 wherein said dielectric is a low-k dielectric.

27. The structure of claim 24 wherein said second permeability is achieved by interspersing a permeability conversion material within said second area of said dielectric, said permeability conversion material having a third permeability, said third permeability being greater than said first and second permeabilities.

28. The structure of claim 27 wherein said permeability conversion material is selected from the group consisting of nickel, iron, nickel-iron alloy, and magnetic oxide.

29. The structure of claim 24 wherein said conductor is selected from the group consisting of copper, aluminum, and copper-aluminum alloy.

30. The structure of claim 24 wherein said conductor is patterned as a square spiral.

31. A structure in a semiconductor chip, said structure comprising:

a dielectric having a first permeability;

a permeability conversion material having a second permeability, said permeability conversion material being interspersed within said dielectric, wherein said second permeability is greater than said first permeability;

an inductor comprising a conductor patterned within said dielectric, said conductor having first and second terminals, said first and second terminals of said conductor being respectively first and second terminals of said inductor.

32. The structure of claim 31 wherein said dielectric is silicon dioxide.

33. The structure of claim 31 wherein said dielectric is a low-k dielectric.

34. The structure of claim 31 wherein said permeability conversion material is selected from the group consisting of nickel, iron, nickel-iron alloy, and magnetic oxide.

35. The structure of claim 31 wherein said conductor is selected from the group consisting of copper, aluminum, and copper-aluminum alloy.

36. The structure of claim 31 wherein said conductor is patterned as a square spiral.